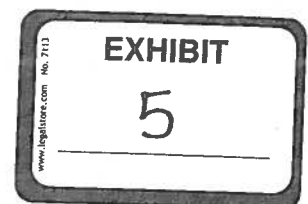




PETROLEUM SERVICES

MHA Nation
Bakken Crude
Job: 100535



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Horace Pipe
253090 - 366th Street
Makoti ND 58756

Report Number: 57801-100535
Date Reported: 3/29/10
Date Received: 2/24/10
Sample No.: 100535-001
Date Sampled:
Sample ID: Bakken Crude
Crude

Analytical Report

Test	Result	Units	Method	Date	Analyst
Distillation Data					
API Gravity	38.4	Deg @ 60 F	ASTM D-287/5002	3/4/10	MN
Specific Gravity	0.8326	60/60 Deg. F	ASTM D-1298/5002		
Asphaltene	0.06	WT %	ASTM D-6560	3/2/10	TH
Carbon Residue-Micro	0.75	WT %	ASTM D-4530	3/4/10	*01
Simulated Distillation					
IBP	32	Deg F	ASTM D-5307	3/1/10	JT
5 % off	172	Deg F			
10 % off	211	Deg F			
15 % off	256	Deg F			
20 % off	292	Deg F			
25 % off	331	Deg F			
30 % off	370	Deg F			
35 % off	410	Deg F			
40 % off	449	Deg F			
45 % off	489	Deg F			
50 % off	530	Deg F			
55 % off	575	Deg F			
60 % off	619	Deg F			
65 % off	668	Deg F			
70 % off	719	Deg F			
75 % off	774	Deg F			
80 % off	834	Deg F			
85 % off	901	Deg F			
90 % off	984	Deg F			
95 % off	---	Deg F			
% Recovered	90.5	@ 1000 Deg.			
% Residue	9.5	@ 1000 Deg.			

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Report Number: 57801-100535
Date Reported: 3/29/10
Date Received: 2/24/10
Sample No.: 100535-001
Date Sampled:
Sample ID: Bakken Crude
Crude

Analytical Report

Test	Result	Units	Method	Date	Analyst
Sulfur, Total by X-Ray Fluoresc.	0.082	WT %	ASTM D-4294	3/1/10	TH

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Report Number: 57801-100535
Date Reported: 3/29/10
Date Received: 2/24/10
Sample No.: 100535-002
Date Sampled:
Sample ID: Bakken Crude
IBP-82 F

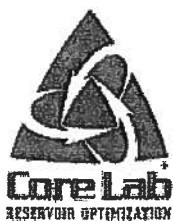
Analytical Report

Test	Result	Units	Method	Date	Analyst
Distillation Data					
Liquid Volume	1.34	%	ASTM D-2892	3/16/10	DBC
Weight Percent	0.97	%	ASTM D-2892		
API Gravity	104.1	Deg @ 60 F	By Cap GC	3/12/10	JAT
Specific Gravity	0.6005	60/60 Deg. F	By Cap GC		

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Report Number: 57801-100535
Date Reported: 3/29/10
Date Received: 2/24/10
Sample No.: 100535-003
Date Sampled:
Sample ID: Bakken Crude
82-200 F

Analytical Report

Test	Result	Units	Method	Date	Analyst
Distillation Data					
Liquid Volume	8.03	%	ASTM D-2892	3/16/10	DBC
Weight Percent	6.68	%	ASTM D-2892		
API Gravity	72.7	Deg @ 60 F	ASTM D-287/5002		
Specific Gravity	0.6928	60/60 Deg. F	ASTM D-1298/5002		
Sulfur, Total by Microcoulometry	<1	ppm wt	ASTM D-3120	3/23/10	CB

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Report Number: 57801-100535
Date Reported: 3/29/10
Date Received: 2/24/10
Sample No.: 100535-004
Date Sampled:
Sample ID: Bakken Crude
200-310 F

Analytical Report

Test	Result	Units	Method	Date	Analyst
Distillation Data					
Liquid Volume	15.99	%	ASTM D-2892	3/16/10	DBC
Weight Percent	14.39	%	ASTM D-2892		
API Gravity	57.3	Deg @ 60 F	ASTM D-287/5002		
Specific Gravity	0.7495	60/60 Deg. F	ASTM D-1298/5002		
Sulfur, Total by Microcoulometry	2	ppm wt	ASTM D-3120	3/24/10	CB

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Report Number: 57801-100535

Date Reported: 3/29/10

Date Received: 2/24/10

Sample No.: 100535-005

Date Sampled:

Sample ID: Bakken Crude
310-390 F

Analytical Report

Test	Result	Units	Method	Date	Analyst
Distillation Data					
Liquid Volume	10.99	%	ASTM D-2892	3/16/10	DBC
Weight Percent	10.41	%	ASTM D-2892		
API Gravity	48.1	Deg @ 60 F	ASTM D-287		
Specific Gravity	0.7880	60/60 Deg. F	ASTM D-1298		
Sulfur, Total by Microcoulometry	6	ppm wt	ASTM D-3120	3/24/10	CB

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Report Number: 57801-100535
 Date Reported: 3/29/10
 Date Received: 2/24/10
 Sample No.: 100535-006
 Date Sampled:
 Sample ID: Bakken Crude
 390-505 F

Analytical Report

Test	Result	Units	Method	Date	Analyst
Distillation Data					
Liquid Volume	14.53	%	ASTM D-2892	3/16/10	DBC
Weight Percent	14.36	%	ASTM D-2892		
API Gravity	40.4	Deg @ 60 F	ASTM D-287		
Specific Gravity	0.8232	60/60 Deg. F	ASTM D-1298		
Sulfur, Total by X-Ray Fluoresc.	0.010	WT %	ASTM D-4294	3/22/10	TH

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Report Number: 57801-100535
Date Reported: 3/29/10
Date Received: 2/24/10
Sample No.: 100535-007
Date Sampled:
Sample ID: Bakken Crude
505-600 F

Analytical Report

Test	Result	Units	Method	Date	Analyst
Distillation Data					
Liquid Volume	10.18	%	ASTM D-2892	3/16/10	DBC
Weight Percent	10.38	%	ASTM D-2892		
API Gravity	35.1	Deg @ 60 F	ASTM D-287		
Specific Gravity	0.8493	60/60 Deg. F	ASTM D-1298		
Sulfur, Total by X-Ray Fluoresc.	0.017	WT %	ASTM D-4294	3/22/10	TH

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Report Number: 57801-100535
Date Reported: 3/29/10
Date Received: 2/24/10
Sample No.: 100535-008
Date Sampled:
Sample ID: Bakken Crude
600-650 F

Analytical Report

Test	Result	Units	Method	Date	Analyst
Distillation Data					
Liquid Volume	4.89	%	ASTM D-2892	3/16/10	DBC
Weight Percent	5.10	%	ASTM D-2892		
API Gravity	31.5	Deg @ 60 F	ASTM D-287/5002		
Specific Gravity	0.8679	60/60 Deg. F	ASTM D-1298/5002		
Carbon Residue-Micro	<0.01	WT %	ASTM D-4530	3/17/10	MKM
Sulfur, Total by X-Ray Fluoresc.	0.081	WT %	ASTM D-4294	3/22/10	TH

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Report Number: 57801-100535
Date Reported: 3/29/10
Date Received: 2/24/10
Sample No.: 100535-009
Date Sampled:
Sample ID: Bakken Crude
650+

Analytical Report

Test	Result	Units	Method	Date	Analyst
Distillation Data					
Liquid Volume	33.95	%	ASTM D-2892	3/16/10	DBC
Weight Percent	37.57	%	ASTM D-2892		
API Gravity	22.1	Deg @ 60 F	ASTM D-287/5002		
Specific Gravity	0.9213	60/60 Deg. F	ASTM D-1298/5002		
Carbon Residue-Micro	2.10	WT %	ASTM D-4530	3/17/10	MKM
Sulfur, Total by X-Ray Fluoresc.	0.190	WT %	ASTM D-4294	3/22/10	TH

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Report Number: 57801-100535
 Date Reported: 3/29/10
 Date Received: 2/24/10
 Sample No.: 100535-010
 Date Sampled:
 Sample ID: Bakken Crude
 650-850 F

Analytical Report

Test	Result	Units	Method	Date	Analyst
Distillation Data					
Liquid Volume	15.55	%	ASTM D-5236	3/16/10	DBC
Weight Percent	16.80	%	ASTM D-5236		
API Gravity	25.8	Deg @ 60 F	ASTM D-287		
Specific Gravity	0.8993	60/60 Deg. F	ASTM D-1298		
Carbon Residue-Micro	<0.01	WT %	ASTM D-4530	3/17/10	MKM
Metals By ICP					
ASTM D5708 / D5708M Proc B	*		ASTM D5708 Proc B	3/29/10	ANM
Iron	<0.010	mg/kg	ASTM D-5708	3/29/10	ANM
Nickel	<0.025	mg/kg	ASTM D-5708	3/29/10	ANM
Vanadium	<0.015	mg/kg	ASTM D-5708	3/29/10	ANM
Sulfur, Total by X-Ray Fluoresc.	0.137	WT %	ASTM D-4294	3/22/10	TH

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Report Number: 57801-100535
Date Reported: 3/29/10
Date Received: 2/24/10
Sample No.: 100535-011
Date Sampled:
Sample ID: Bakken Crude
850-1000 F

Analytical Report

Test	Result	Units	Method	Date	Analyst
Distillation Data					
Liquid Volume	8.64	%	ASTM D-5236	3/16/10	DBC
Weight Percent	9.55	%	ASTM D-5236		
API Gravity	22.2	Deg @ 60 F	ASTM D-287		
Specific Gravity	0.9204	60/60 Deg. F	ASTM D-1298		
Carbon Residue-Micro	0.33	WT %	ASTM D-4530	3/17/10	MKM
Metals By ICP					
ASTM D5708 / D5708M Proc B	*		ASTM D5708 Proc B	3/29/10	ANM
Iron	<0.010	mg/kg	ASTM D-5708	3/29/10	ANM
Nickel	<0.025	mg/kg	ASTM D-5708	3/29/10	ANM
Vanadium	<0.015	mg/kg	ASTM D-5708	3/29/10	ANM
Sulfur, Total by X-Ray Fluoresc.	0.181	WT %	ASTM D-4294	3/22/10	TH

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Report Number: 57801-100535
Date Reported: 3/29/10
Date Received: 2/24/10
Sample No.: 100535-012
Date Sampled:
Sample ID: Bakken Crude
1000+

Analytical Report

Test	Result	Units	Method	Date	Analyst
Distillation Data					
Liquid Volume	9.76	%	ASTM D-5236	3/16/10	DBC
Weight Percent	11.22	%	ASTM D-5236		
API Gravity	16.3	Deg @ 60 F	ASTM D-287		
Specific Gravity	0.9571	60/60 Deg. F	ASTM D-1298		
Asphaltene	0.20	WT %	ASTM D-6560	3/18/10	TH
Carbon Residue-Micro	7.02	WT %	ASTM D-4530	3/17/10	MKM
Sulfur, Total by X-Ray Fluoresc.	0.271	WT %	ASTM D-4294	3/22/10	TH

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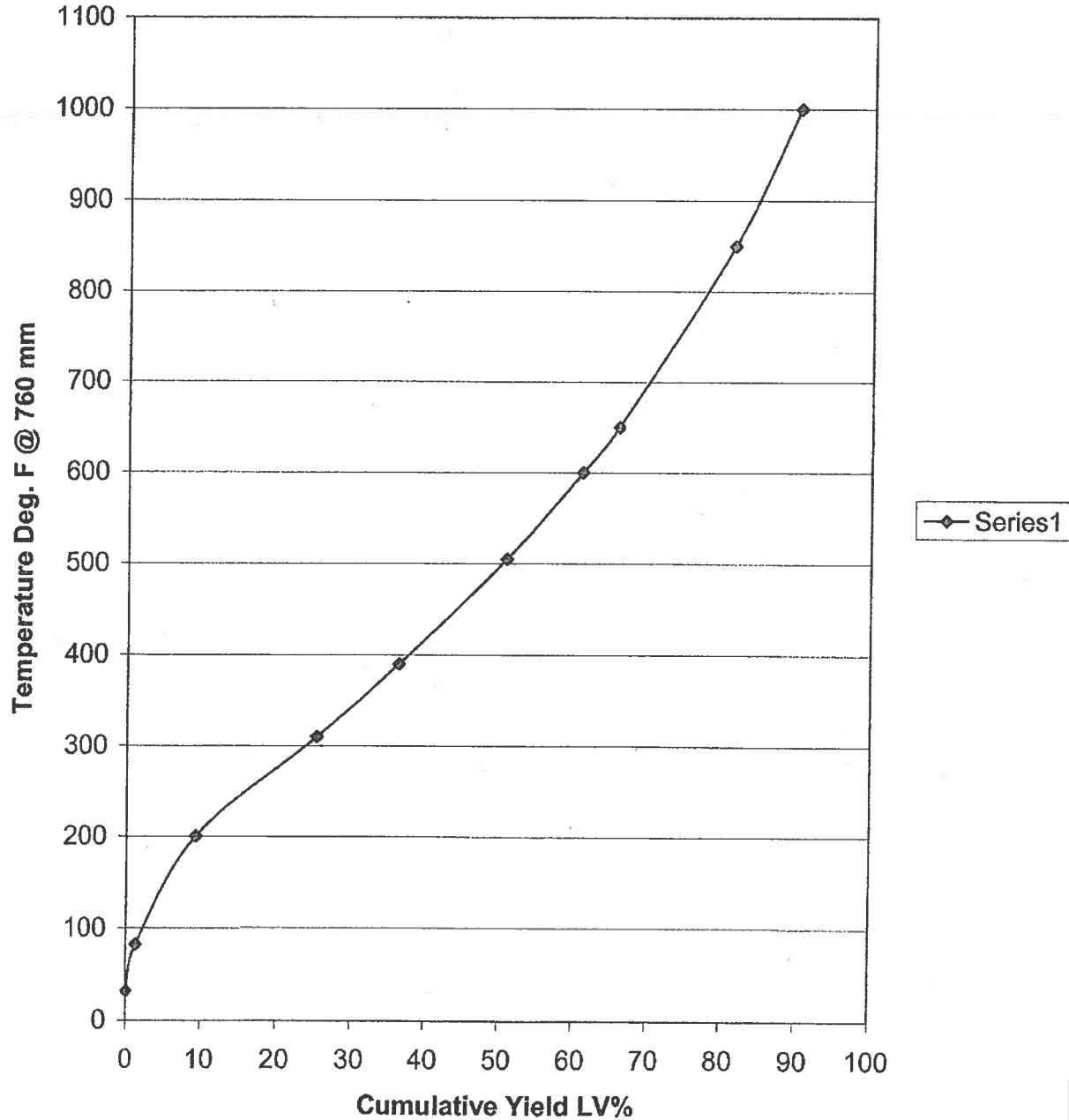
MHA Nation
Job: 100535
Well: Bakken Crude

FRACTIONAL DISTILLATION SUMMARY

Deg. F	LV%	Cum. LV%	WT%	Cum WT%	Deg. F
IBP- 82	1.34	1.34	0.97	0.97	IBP- 82
82-200	8.03	9.37	6.68	7.65	82-200
200-310	15.99	25.36	14.39	22.04	200-310
310-390	10.99	36.35	10.41	32.45	310-390
390-505	14.53	50.88	14.36	46.81	390-505
505-600	10.18	61.06	10.38	57.19	505-600
600-650	4.89	65.95	5.10	62.29	600-650
650-850	15.55	81.50	16.80	79.09	650-850
850-1000	8.64	90.14	9.55	88.64	850-1000
1000+	9.76	99.90	11.22	99.86	1000+
650+	33.95	99.90	37.57	99.86	650+

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MHA Nation Job: 100535 Bakken Crude Oil



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